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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,877

08/09/2006

Massimiliano Cavallini

1311.75692

4474

24978

7590

04/02/2009

GREER, BURNS & CRAIN
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EXAMINER

WILCZEWSKI, MARY A

ART UNIT

PAPER NUMBER

2822

MAIL DATE

DELIVERY MODE

04/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,877	Applicant(s) CAVALLINI ET AL.	
	Examiner M. Wilczewski	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 46-53, 57, 58, 64, 67, 70-72, 82, 83 and 85 is/are rejected.
- 7) ☒ Claim(s) 54-56, 59-63, 65, 66, 68, 69, 73-81, 84 and 86-90 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09 August 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to the Preliminary Amendment filed on 09 August 2006. Claims 1-45 have been cancelled. Newly-submitted claims 46-90 are pending in the application.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 46-50, 53, 57, 58, 64, 67, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over the IBM Technical Disclosure Bulletin entitled ***Plasma Treatment to Improve Resist Adhesion***, cited by Applicant.

The IBM Technical Disclosure Bulletin (IBMTDB) disclose a method for providing a thin film on a substrate comprising the steps of dispersing a material (silica) in a polymer substrate comprising polytetrafluoroethylene (PTFE) in order to obtain a mixture, modeling the mixture by treating it with a plasma etch to form on a first surface

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of the mixture protrusions and recesses (figure 1B) and conditioning the mixture by washing the surface with a caustic solution which removes loosely held silica particles from the surface of the mixture and then heating the mixture (page 322). Since the washing step disclosed in the IBMTDB causes the material to emerge from the surface of the mixture, the removal of these loosely-held silica particles will result in a smoothing of the surface of the mixture. The IBMTDB does not expressly disclose that the "caustic solution" with which the mixture is washed is a solvent. However, it would have been obvious to one skilled in the art that the "caustic solution" used in the method of the IBMTDB could have been a solvent, since solvents are capable of dissolving or corroding, as is a caustic solution.

Claims 46, 48-52, 64, 67, 71, 72, 82, 93, and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al., US 2002/0160103.

Fukunaga et al. disclose a method for providing a thin film on a substrate comprising the steps of dispersing a material (metal particles) in a substrate 10 to obtain a mixture (paragraph [0053]); modeling the mixture by irradiating the mixture with an energy beam 24 (paragraphs [0070] and [0071]) and conditioning the mixture by removing non-irradiated portions using a solvent and depositing an insulating layer 32 and heating the mixture to form a smooth surface (figures 6B and 7B and paragraphs [0072]-[0074]). Coating the emerged material 30 with insulating layer 32 (claim 52) is deemed to modify the intrinsic properties of the emerged material by electrically isolating the emerged material 30 from one another.

Allowable Subject Matter

Claims 54-56, 59-63, 65, 66, 73-81, 84, and 86-90 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Duplicate Claims

Claims 67-69 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 64-66. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additionally cited references disclose various methods used for forming thin layers. US Patent 7,042,751 teaches the imprinting (modeling) and etching (conditioning) of a resin layer. However, this patent does not teach dispersing a material in a substrate, as recited in claim 46.

It is noted that the acronym SMM used in Applicant's specification stands for **Single Molecule Magnet**.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Wilczewski whose telephone number is (571) 272-1849. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. Wilczewski/
Primary Examiner, Art Unit 2822